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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,726	12/05/2001	Tsutomu Tanaka	1405.65975	2319

7590

08/26/2003

Patrick G. Burns  
Suite 2500  
300 South Wacker Drive  
Chicago, IL 60606

EXAMINER

UHLIR, NIKOLAS J

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/004,726

Applicant(s)

TANAKA ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/809,475.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## DETAILED ACTION

### *Election/Restrictions*

1. Claim 9 is noted to contain nominal method steps and claim 10 is noted to contain nominal apparatus limitations. At this time restriction has not been required between the product claims 1-8, and 11-17, the method claim 9 and the apparatus claim 10, because the method and apparatus claims do not recite any significant method steps/apparatus limitations and therefore considered as part of the product claims. If the method/apparatus claims are amended to contain significant method steps/apparatus limitations they will be subject to restriction based on original presentation.

### *Priority*

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No.

09/809475, filed on 3/15/01. ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-6, and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Hirokane et al. (US6117544).

5. Claim 1 requires a magneto-optical recording medium including a recording layer, an intermediate layer, and a reproduction layer in which data is transferred from the recording layer to an aperture between two mask regions generated along the

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scanning direction of the reproduction layer by a temperature distribution through beam spot scanning, thereby reading the data out, wherein a mask layer having a direction of easy magnetization an in-plane direction at room temperature is formed on the reproduction layer, the mask layer having a magnetic property for controlling the expansion in a lateral direction of the aperture between the two mask regions generated in front and behind along the scanning direction under the temperature distribution given by the beam spot.

6. It is important to note that while it is the examiners duty to interpret the claims in light of the specification, limitations from the specification are not read into the claims. Further, the examiner notes that it is his duty to give the claims their "broadest reasonable interpretation." Thus, for the purpose of this examination, the examiner notes that claim 1 as written, other then reciting that the mask layer is required to be "formed on" the reproduction layer, does not require a particular ordering of the recording, reproducing, intermediate, and mask layers. Therefore, given that the applicant has not specified the ordering of the layers, the examiner interprets "formed on" in claim 1 to allow the mask layer to be formed above or below the reproducing layer. Further, the examiner notes that "formed on" open language and does not require a layer to be "formed in contact with" or "formed directly adjacent to" another layer.

7. Bearing the above interpretation in mind, Hirokane et al. (Hirokane) teaches a magneto-optical recording medium comprising a substrate 13, a dielectric layer 14 formed on the substrate, a reproduction layer 1 formed on the dielectric layer, a reproduction assist layer 10 formed on the reproduction layer, a in plane magnetic layer

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9, on the reproduction assist layer, a non-magnetic intermediate layer 2 formed on the in plane magnetic layer, a recording layer 3 on the non-magnetic intermediate layer, a flux adjusting layer 4 on the recording layer, and a protective layer 15 on the flux adjusting layer (Columns 37-40, embodiment 6, and figure 28). Both the reproduction layer 1 and the reproduction assist layer 10 exhibit in-plane magnetization at room temperature which switches to perpendicular magnetization as the temperature is elevated (column 32, lines 21-40). Although not explicitly stated, It is clear from figures 27 and column 31-32 lines 67-27 that **both** the reproducing layer 1 and the reproducing assist layer 10 mask the magnetization of the recording layer 3 when the reproduction and reproducing assist layers exhibit in plane magnetization, as in plane magnetization of these layers is not magnetostatically coupled to the perpendicular oriented recording layer. Thus, as the reproduction and reproduction assist layers are oriented in-plane in regions before and after the beam spot, these layers form a double mask (masks formed before and after the beam spot). The formation of these double masks is discussed at column 32-33, line 67-line 15 of Hirokane. It is further noted that Hirokane teaches that the area of the recording layer that is reproduced is greatly narrowed through the use of the reproducing assist layer that has a curie temperature greater than that of the reproduction layer 1 (column 33, lines 18-27). It is the examiners position that either the reproduction layer 1 or the reproduction assist layer 10 of Hirokane is equivalent to the applicants claimed "mask" layer, as it is known in the art that reproduction layers can serve as masking layers. This is evidenced by applicant's discussion at page 6, lines 6-16 of the instant specification, wherein the applicants

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discuss a prior art magneto-optic medium and state "the reproduction layer serves as a mask." Further, both the reproduction and reproduction assist layers are "reproduction layers." Thus, it is the examiner position that the reproduction layer 1 of Hirokane is equivalent to applicants claimed "reproduction layer" and the reproduction assist layer 2 of Hirokane is equivalent to applicants claimed "mask layer." The reproduction assist layer narrows the area of the recording layer that is reproduced, and thus is considered by the examiner to meet the functional characteristics of the mask layer required by claim 1, namely to control the expansion in a lateral direction of the aperture between the front and rear masks generated in the reproducing layer. Further, the in plane magnetic layer and the recording layer of Hirokane are equivalent to the applicants claimed intermediate and recording layers respectfully. Thus, the limitations of claim 1 are met.

8. Further should the applicant in a future amendment require a specific ordering of the layers, such that the mask layer, reproducing layer, intermediate layer, and recording layer are formed in the order recited, it is the examiners position that the reproduction assist layer of Hirokane is equivalent to applicants claimed reproducing layer, and the reproducing layer of Hirokane is equivalent to applicants claimed mask layer. The reproducing layer of Hirokane clearly forms a double mask and thus limits in a lateral direction the area of the recording layer that is to be reproduced. The reproduce assist layer is a "reproduction layer" and also forms a double mask controlling the area of the recording layer that is reproduced. Thus, even if the applicant were to make the aforementioned amendment, absent a persuasive showing or

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argument that one of ordinary skill in the art would not recognize the reproduction and reproduction assist layers of Hirokane to be equivalent for the purpose of serving as "reproduction layers," such an amendment would not render the claim patentable.

9. Claim 2 requires the mask layer to show a direction of easy magnetization extending in a direction perpendicular to the layer in a region of predetermined reproduction temperature given by the beam spot irradiation, and shows a direction of easy magnetization extending in an in-plane direction at a temperature region that is lower or higher than that of the reproduction temperature region. These limitations are met as set forth above for claim 1, and are clearly shown by figures 24 and 27 of Hirokane.

10. Claim 3 requires the formation of a mask region in accordance with a temperature distribution given by an optical beam irradiated during reproduction, and a mask layer for controlling the expansion of the reproduction aperture defined by the mask layer is formed on the reproduction layer, wherein the recording medium is operated in magnetic super resolution (MSR) mode. The bulk of these limitations are met as set forth above for claims 1 and 2. Regarding applicants requirement that the medium be operated in MSR mode, Hirokane specifically teaches that the magneto-optical media of his invention are magnetic super resolution type media.

11. Claim 5, requires the mask layer of the magnetic recording medium of claim 3 or 4 to have a curie temperature higher than that of the reproducing, recording, or intermediate layers, and requires the mask layer to show almost perpendicular hysteresis at a reproduction temperature and oblique hysteresis temperatures regions

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lower and higher than the reproduction temperature region. In a specific embodiment, Hirokane teaches a magneto-optical recording medium comprising a substrate, an AlN protective layer on the substrate, a 40nm thick GdFeAl recording layer having a Curie temperature of 200° C on the protective layer, a 25nm thick GdFeCo reproducing assist layer having a Curie temperature of 360° C on the reproduction layer, a 20nm thick in-plane magnetization layer (equivalent to applicants claimed intermediate layer having a Curie temperature) having a Curie temperature of 120° C on the reproduction assist layer, an AlN non-magnetic intermediate layer on the in plane magnetization layer, and a 30nm thick TbFeCo recording layer on the non-magnetic intermediate layer (column 40, lines 1-27 and column 35, lines 4-51). The reproducing assist layer is considered by the examiner to be equivalent to the applicants mask layer in this instance. Thus, as the mask layer has a greater Curie temperature than the recording, reproducing, and intermediate layers, the limitation in claim 5 requiring the mask layer to have a Curie temperature higher than the recording reproducing and intermediate layers is met.

Regarding applicant's limitations that the mask layer exhibit almost perpendicular hysteresis at a reproducing temperature region and oblique hysteresis above and below the reproducing temperature region. These limitations are met as set forth above, as it has been established that the reproducing assist layer of Hirokane exhibits in plane (equivalent to oblique) magnetization above and below a reproducing temperature region, and exhibits perpendicular magnetization at the reproducing temperature.

12. Claim 6 requires the mask layer to have a thickness that is 3-67% that of the reproduction layer. As stated above for claim 5, in the specific example cited, Hirokane



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teaches that the reproduction assist layer has a thickness of 25nm, and the reproduction layer has a thickness of 40nm. Thus, the reproduction assist layer (equivalent to applicants claimed mask) has a thickness that is 55% that of the reproduction layer.

13. Claim 9 requires a reproduction method for a magneto-optical medium operated in MSR mode, wherein the medium includes at least a recording layer, intermediate layer, reproduction layer, and mask layer stacked in this order, wherein the method recited is a standard MSR method aside from the limitation requiring the data to be passed through a 2nd reproduction aperture generated in the mask layer for controlling the expansion of the first reproduction aperture in the reproducing layer.

14. It is noted that while the limitations of claim 1 do require the layers to be formed in the recited order, the language utilized by claim 9 does not require these layers to be formed "directly adjacent to," or "in direct contact with" each other, and thus is open to other layers being present in the medium, so long as the recited layers are formed in the requisite order.

15. Bearing the above interpretation in mind, the disclosure of Hirokane is relied upon as set forth at section 7 of this office action. It is the examiners position that the reproducing assist layer of Hirokane is equivalent to applicants claimed "reproducing layer" and the reproducing layer of Hirokane is equivalent to applicants claims "mask" layer. Column 3, line 57-column 39, line 27 teach a method that meets the applicants claimed method limitations. It is the examiners position that as each of the reproducing layer and reproducing assist layers of Hirokane form double masked reproduction

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apertures as clearly shown by figures 27-28, the limitations regarding the passage of data through a first reproduction aperture and a 2nd reproduction aperture are met.

16. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirokane as applied to claim 1 above, and further in view of Nakayama et al. (US5662988).

17. Hirokane as set forth above for claim 1 does not teach a mask layer made of GdFeCo wherein the mask layer contains 26-30 atomic % Gd and 20-30 atomic % Co, as required by claim 4.

18. However, it is noted that Hirokane as set forth above teaches that the reproduction assist layer (considered equivalent to the applicants mask layer) can be a GdFeCo alloy. Further, Hirokane teaches that the reproducing assist layer should have a curie temperature that is at least as high as the reproduction layer (column 32, lines 45-67)

19. However, Nakayama et al. teaches that the composition of a GdFeCo alloy impacts the resultant curie temperature of that alloy, wherein alloys with lower amounts of Co exhibit lower curie temperatures, and alloys with higher amounts of Gd exhibit lower curie temperatures (columns 13-14, lines 55-17 and figures 13-15).

20. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the amounts of Gd and Co in the GdFeCo alloy reproducing assist layer taught by Hirokane.

21. One would have been motivated to make this modification in light of the teaching in Hirokane that the curie temperature of the reproducing assist layer should be carefully controlled to be at least as high as the reproducing layer, and the teaching in

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Nakayama that the composition of a GdFeCo alloy impacts its curie temperature, with GdFeCo alloys containing lower amounts of Co exhibiting lower curie temperatures, and alloys containing higher amounts of Gd exhibiting lower curie temperatures.

22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirokane as applied to claim 1 above, and further in view of Matsumoto et al. (US5723227).

23. Hirokane is relied upon as set forth above at section 7 of this office action, with the reproducing layer of Hirokane being equivalent to applicants claimed mask layer and the reproducing assist layer of Hirokane equivalent to applicants claimed reproducing layer.

24. Hirokane as set forth above teaches a magnetic medium suitable for use in MSR mode. However, Hirokane does not teach the apparatus required by claim 10 for recording and reproducing data from this medium.

25. However, with respect to the apparatus limitations of claim 10, Matsumoto teaches an apparatus for use with MSR type magneto-optical media, wherein the apparatus comprises a spindle motor 32 (equivalent to applicants mounting means for rotably mounting the magneto-optic disc), a biasing magnetic head 34 (equivalent to applicants claimed magnetic field generating device) a laser diode 42, lens 44, beam splitter 46, and lens 48 (equivalent to applicants claimed optical system), and a photo detector (equivalent to applicants claimed signal processing means) (figure 4 and columns 8-9, line 42- line 17).

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26. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the apparatus disclosed by Matsumoto to read and record data on the MSR type magneto-optical recording medium taught by Hirokane.

27. One would have been motivated to make this modification in light of the fact that Hirokane teaches MSR type magneto-optical media and the apparatus of Matsumoto is specifically used with MSR type media.

28. Regarding applicants requirements relating to the method of reproduction by scanning a light beam having a spot size larger than the track pitch under a state wherein a reproduction field is applied in a direction perpendicular to the surface such that the data to be read is exchange coupled to a first reproduction aperture defined between two mask regions generated on the reproduction layer in front and behind along the track direction by temperature distribution through the light beam irradiation, and passing the data through a second reproduction aperture. Hirokane clearly teaches this mode of reproduction, as discussed above for claim 9 and shown by figures 27 and 29 of Hirokane.

### ***Double Patenting***

29. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

30. Claims 11, and 13-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, and 4-6 of copending Application No. 09/809475 as evidenced by US Patent 6117544 to Hirokane. Although the conflicting claims are not identical, they are not patentably distinct from each other.

31. It should be noted that the copy of US application 09/809475 is out of date. The allowed case was amended prior to allowance to include the requirement that the recording layer, reproducing layer, reproduction layer, and mask layer be formed in the order recited. As this feature is claimed by the instant claims 11 and 13-17, the applicant should note that this feature is present in claim 1 of the prior application, although the printed copy provided has not been updated to incorporate this limitation.

32. Claim 1 of application 09/809475 is identical to the limitations of claim 11 of the instant application, save for recitation in claim 11 of the instant application that the mask layer must have a region of magnetization in a perpendicular direction surrounded by regions of magnetization in an in-plane direction at a certain temperature. This recitation however is merely an explicit recital of the known functional characteristics of a mask layer having an in plane magnetization at room temperature, wherein the mask layer forms a double mask, as evidenced by pages 7-9 of the instant application (background), and column 32-33, lines 59-16 and figures 23 and 24 of US patent 6117544 to Hirokane. Thus, while claim 11 of the instant application is not identical to

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that of the prior application, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a mask layer exhibiting in-plane magnetization at temperature regions above and below a region having perpendicular magnetization at a reproducing temperature.

33. Claims 13 and 15-17 of the instant application claims are word for word identical to that of claims 2 and 4-6 of application 09/809475 respectively, and thus are not patentable for the same reasons set forth above for claim 11.

34. Claim 14 of the instant application is identical to that of claim 3 of the US 09/809475, save for the fact that the instant application include Ag within and otherwise identical Markush group of suitable non-magnetic layer materials. Thus, while claim 14 of the instant application and claim 3 of US09/809475 are not identical, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize any one of the materials other than Ag in claim 14, as claim 3 of 09/809475 recognizes these materials to be equivalent for this purpose.

35. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented. However, it is noted that 09/809475 has been allowed, but has not yet issued.

***Allowable Subject Matter***

36. Claims 7-8 are allowed.

37. The following is a statement of reasons for the indication of allowable subject matter: Claim 7 requires a magneto-optical recording medium comprising: a recording layer having a specific composition and an easy axis direction perpendicular to the

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layer, a intermediate layer having a specific composition and an easy axis in plane at room temperature, a reproduction layer having a specific composition and having an easy axis direction perpendicular to the layer, the layers being stacked in this order, wherein a mask layer having a specific composition is formed on the reproducing layer, wherein the mask layer has an easy axis oriented in plane at room temperature and exhibits a curie temperature greater than the other magnetic layers.

38. The closest prior art to that of the instant claim 7 is US6117544 to Hirokane and US 5662988 to Nakayama. While Hirokane discloses a recording medium having 4 magnetic layer exhibiting the required magnetic orientations in the required order, Hirokane teaches that the reproduction assist layer (Hirokane's second layer, applicants claimed reproduction layer) should have a curie temperature higher than that of the reproduction layer (Hirokane's first layer, applicants claimed mask layer). Thus, Hirokane does not teach the required Curie temperature relationship in combination with the required structure. There is no teaching or motivation in the prior art that would lead one of ordinary skill to alter the structure of Hirokane such that the curie temperature of Hirokane's 1st magnetic layer (Hirokane's reproduction layer, applicants claimed mask layer) exhibits a higher curie temperature than the recording, reproducing, and intermediate layers.

39. Further, Nakayama discloses a magneto-optical recording medium having four magnetic layers, wherein the 1st through 4th magnetic layers meet the applicant's magnetization direction requirements. Nakayama fails to teach or render obvious a structure wherein the 2nd layer is a read-out layer. Given the knowledge in the prior art

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regarding the functional differences between a reproducing layer (applicants claim 1 layer 2) and a memory layer (Nakayama's layer 2) (see page 6, line 6-page, line 24 of the instant specification for a discussion of the functional characteristics of reproducing and recording layers in magneto-optical media), one of ordinary skill in the art would not recognize these layers to be functionally equivalent, and would not have been motivated to utilize the writing layer of Nakayama (Nakayama's layer 2) as a read out layer (applicant's claim 1, layer 2).

40. Thus, in light of these deficiencies, the examiner deems claims 7-8 patentable over the prior art.

***Examiner's Note***

41. Without wishing to direct the applicant in any way, the examiner respectfully notes that the patentable feature of the applicants prior application was the combination of the applicants claimed structure (perpendicular recording layer, in-plane intermediate layer on the recording layer, perpendicular reproducing layer, in-plane-perpendicular mask layer formed in this order) with the applicants Curie temperature requirement (in plane -> perpendicular mask has higher curie temperature then that of the other three magnetic layers). If the applicant were to include these limitations into the instant independent claims in such a way so as to avoid double patenting with the prior application, the instant case would be allowable. No guarantee of patentability is made by the examiner by the above statement, as the examiner must review the applicants amendment and the examiners supervisor must review the application prior to the case being allowed.



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***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.



nju  
August 11, 2003

  
Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700